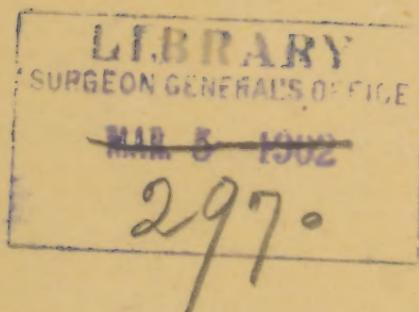


WOLFF (L.)

Soluble Compressed pellets  
for Hypodermic medication —





Wolff (L.)

Presented with the compliments of L. WOLFF & CO., Chemists, N. W. cor.  
Chestnut and Twelfth Streets, Philadelphia, Pa.

## SOLUBLE COMPRESSED PELLETS

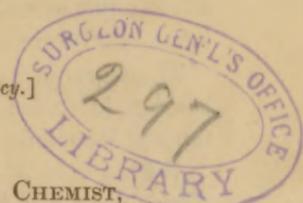
FOR

# HYPODERMIC MEDICATION.

[Reprint from the American Journal of Pharmacy.]

BY L. WOLFF, M. D., PHARMACEUTICAL CHEMIST,

N. W. cor. Chestnut and Twelfth Streets, Philadelphia.



With the introduction of hypodermic medication as a permanent feature in therapeutics, a demand was made on the pharmacist to prepare the proper remedies required for this use in suitable form. The principal agents thus required were the salts of morphia, and to have them in a most concentrated form, the solution of Magendie, containing two grains of the morphia salt to each drachm of water, was usually dispensed.

It was soon found, however, that this was too bulky to carry in the quantities that might be required, and besides that it would not keep well, being subject to decomposition at the expense of the morphia salt, by the formation of confervæ, which, like all fungi, are apt to create irritation of the skin and abscesses, often of a serious nature. The addition of such antiseptics as glycerin, carbolic acid, and chloral hydrate, though obviating this difficulty, increases the burning pain accompanying the injection, in such a degree as to render these admixtures certainly undesirable.

To avoid all of these defects practitioners soon got into the habit of carrying powders containing usually a quarter grain of morphia sulphate each, to which is often admixed a minute quantity of atropia, to correct the unpleasant effects of the morphia and to increase its anæsthetic

properties, which powders are then dissolved in a syringeful of water when needed.

But even the morphia powders prove inconvenient, for various reasons. As usually one quarter grain cannot be accurately weighed on the pharmacist's dispensing scales, they are rarely so evenly divided as desirable for the purpose, besides they are also too bulky to carry in quantities, and not always, at the pressure of the moment to relieve pain, well or easily removed from the paper in which they are contained, even if they should not have been previously partly spilled in the pocket or pocket-case of the physician. The morphia salt in this form is also subject to the action of atmospheric moisture or the warmth of the body, and forms as a consequence a concrete mass not easily dissolved, if not actually deteriorated.

Impressed by these objections, my attention was recently called to the advisability of making the powders into small pills, which I accomplished by an admixture of an equal quantity of white sugar and a little water.

These granules so prepared, however, were not readily soluble; the sugar, besides, increased the burning sensation already experienced in subcutaneous injections.

With a view of increasing the solvent action of the water on the surface of the powder, I had constructed a small pill press and with it overcame the mechanical obstacle, while we were soon led to substitute sodium chloride for the sugar as a disintegrator, which in dilute solutions is painless and devoid of irritant action when applied to mucous surfaces, forming, as it does, a principal ingredient of the liquids of the organism.

As morpha sulphate, however, seemed to dissolve badly and tardily in a solution of sodium chloride, I adopted in its place the hydrochlorate of that alkaloid, already suggested by Trousseau for hypodermic injections, and recommended by English authors, among whom "Christison" gave it the preference, because he attributed to it a more constant action, unaccompanied by unpleasant symptoms.

With these, and by means of the pill press, I obtained pellets forming rapidly clear solutions in a little water, while by the presence of the sodium chloride the burning pain of the injection seemed to be considerably diminished, and its absorption, probably due to the crystallloid nature of the salt and its superior diffusibility, seemed to be promoted. (Pellets here exhibited.)

The full effect of a hypodermic injection of morphia is usually experienced in from twelve to fifteen minutes, whereas by the use of these pellets it has been noted to take place in from four to ten minutes.

The pellets can be easily made by any pharmacist having the necessary pill press, but should not be compressed with too much force (a tap

with a light wooden mallet usually suffices), else the solutions will not be rapidly enough obtained.

*When used, they should be first moistened with one drop of water out of the filled syringe, then broken up with the blunt point of the syringe, all the water added, then sucked up and forced out of the syringe two or three times, until the solution is complete, which I have frequently succeeded in doing in twenty-two seconds.*

I would enumerate the advantages of these pellets as follows :

1. They occupy the smallest possible space.
2. They can be carried without paper. (I usually dispense them in a glass tube, about one inch in length, closed on both ends by small corks.)
3. They are always accurate; containing one quarter grain of sodium chloride, besides the medicinal agent; their weight is at least half a grain, which can be readily weighed out; for the same reasons, the possible inaccuracy in weights or weighing is reduced to one-half.
4. The morphia salts, by the presence of sodium chloride, possessing antiseptic properties, can be preserved for an indefinite period.
5. Their solutions give less pain than the ordinary solutions of either morphia salts alone or with their antiseptic admixtures.
6. They can be kept on hand ready-made, and therefore dispensed at a smaller cost than the powders.

There is no reason why this form for hypodermic remedies may not be extended to other remedial substances, and as salt is already suggested as an addition to mercuric bichloride for that purpose, this might certainly be so prepared, as well as apomorphia, pilocarpia hydrochlorate, strychnia hydrochlorate, and other remedial agents subcutaneously administered in minute quantities.

*Philadelphia, November, 1880.*

The pellets, as originated by Dr. L. Wolff, are manufactured by L. Wolff & Co., Philadelphia. Send for price list.





